(No Model.)

# T. A. EDISON.

## PHONOGRAPH.

No. 443,507. Patented Dec. 30, 1890.

FIG. 1.

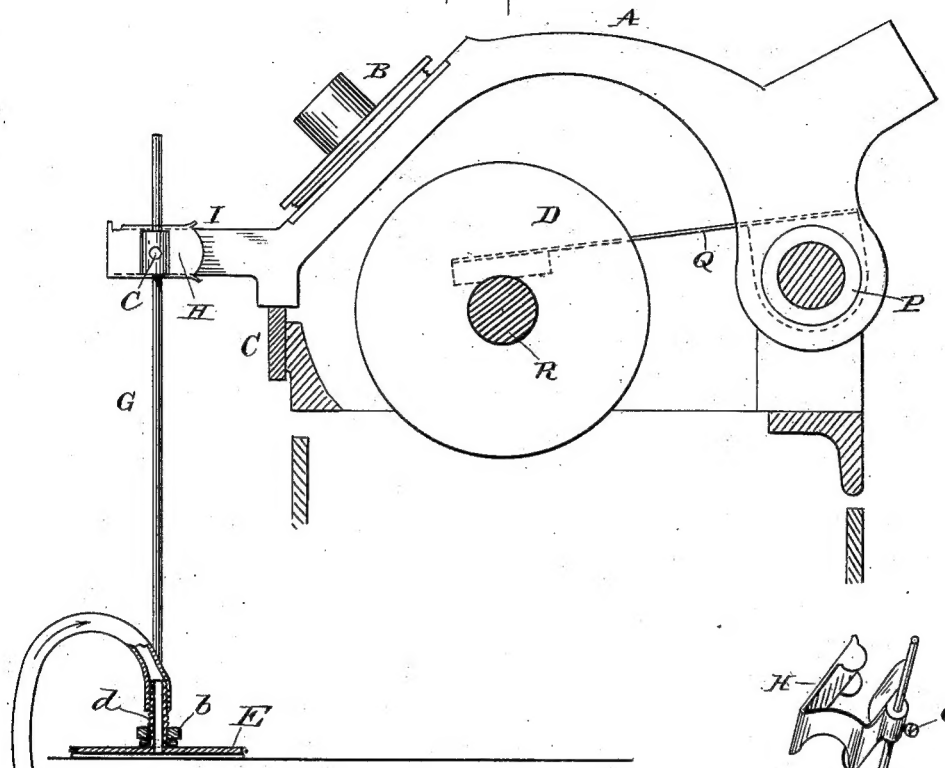



FIG. 3.

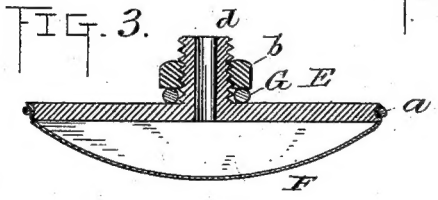
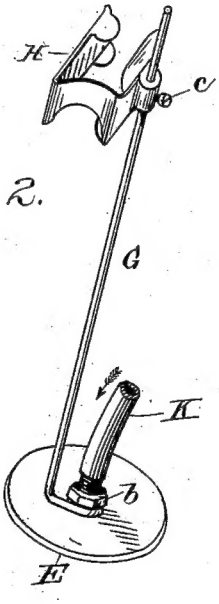
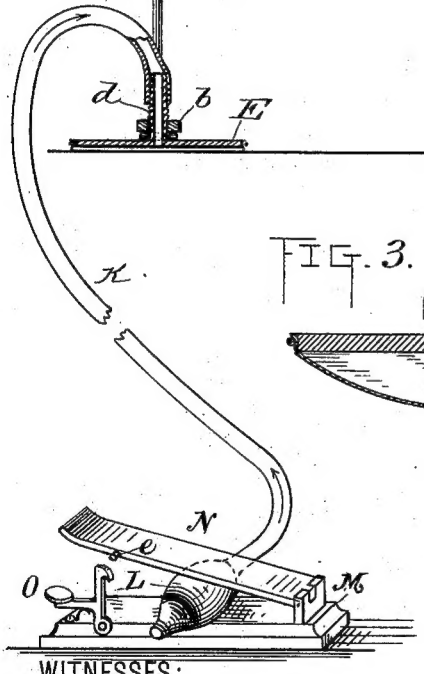



FIG. 2.

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# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

## PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 443,507, dated December 30, 1890.

Application filed December 27, 1889. Serial No. 335,141. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Phonographs, (Case No. 848,) of which the following is a specification.

The object of my invention is to provide, in connection with a phonograph, a simple and effective means for raising the arm which holds the recorder and reproducer off from the guide-rest and the traveler-arm off the feed-screw when it is desired to temporarily stop the operation of the machine during the operation of recording or reproducing. Heretofore the rocking holding-arm with which the traveler-arm is connected has been provided with a handle to be taken hold of by the operator to lift it. By my present invention I enable the slight lifting necessary to stop the feed movement to be done without the necessity of using the hands.

In carrying my invention into effect I make use of a pneumatic device for producing the motion to lift the arm, such device being arranged to be operated by the pressure of the foot; and my invention consists in such device and arrangement, as well as in the various other novel devices and combinations of devices employed by me in accomplishing the above-named object, as hereinafter set forth and claimed.

My invention is illustrated in the accompanying drawings.

Figure 1 is an end view and partial section of the phonograph provided with the attachment constituting my invention; Fig. 2, a perspective view of the operating device detached from the machine, and Fig. 3 an enlarged vertical section of a portion of said device.

The phonograph shown in Fig. 1 is of the character well known, in which there is no adjustment at the guide-rest.

A is the rocking holding-arm carrying the recorder or reproducer, or both, at B, and carried by the sliding sleeve P.

C is the guide-rest which extends along the front of the machine and on which said arm rests and slides during the operation of the machine.

D is the cylinder for carrying the phonogram-blank.

Q is the traveler-arm engaging with the thread of the feed-screw on the phonogram-shaft R and connected with the sleeve P.

The device for lifting the arm consists of a flat plate E, preferably of metal, to the lower side of which is secured an expansible diaphragm F, which is shown as attached to the plate E by a wire *a* entering a groove in the edge of the plate. To the top of the plate is attached, preferably by means of the nut *b*, as shown, a rod G, near the top of which is a spring-clamp H, secured to the rod by a set-screw *c*, and adapted to grasp the arm I, which extends from the front of the rocking holding-arm in front of the guide-rest. The plate E has extending upwardly from it a tubular stem *d*, on which is screwed the nut *b*. To the top of this stem is attached a rubber tube K, such tube being flexible and terminating in a bulb L, which may be arranged to lie on the floor. I have shown it, however, as placed on a base M, which has hinged upon it a plate N, and is provided with a spring-catch O, engaging a pin *e* on the plate N when the plate is depressed.

In order to lift the rocking arm from the guide-rest and the traveler-arm from the feed-screw, the bulb L is compressed by the pressure of the foot of the operator either on the plate N or directly upon the bulb, and this forces air into the space between the plate E and the diaphragm F, and expands such diaphragm, so that the plate E and rod G are raised and the arm is lifted off the guide-rest sufficiently to raise the recording or reproducing point off the cylinder and disengage the traveler-arm from the feed-screw. This stops the forward feeding of the recorder or reproducer, so that the recording or reproducing is interrupted at the point which has been reached, and when the parts are lowered once more the operation proceeds at once.

The spring-catch O will keep the bulb L compressed until the shifting of the rocking holding-arm is finished, when the same can be released by tripping said catch with the foot. This device obviates the necessity of keeping the foot on the bulb while shifting the machine; but it is evident that the same result may be accomplished in this way.

It is evidently not essential to the operation of the pneumatic lifting device that the foot should be used to compress the bulb, since if at any time it should be found more convenient to compress the bulb by hand this can readily be done.

What I claim is—

1. The combination, in a phonograph, of a phonogram-blank or recording medium, a recorder and reproducer co-operating with said blank, feeding mechanism for said recorder and reproducer, and a pneumatic device for disengaging the feeding mechanism, substantially as set forth.

2. The combination, in a phonograph, of a phonogram-blank or recording medium, a recorder and reproducer co-operating with said blank, feeding mechanism for the phonograph, two expansible chambers, one of which is connected with said feeding mechanism and the other of which is adapted to be compressed, and an air-conveying connection between said chambers, substantially as set forth.

3. The combination, with a phonograph feeding mechanism, of the expansible diaphragm, the plate to which the same is attached, the rod extending from said plate, means for attaching said rod to the feeding device of the phonograph, a compressible bulb connected with the chamber formed by said diaphragm, and an air-conveying connection between said bulb and chamber, substantially as set forth.

4. The combination, with a phonograph, of a feeding device therefor, the expansible chamber connected with the feeding device for raising the same, the bulb connected with said chamber by an air-conveying connection, and the hinged plate for compressing said bulb, substantially as set forth.

5. The combination, with a phonograph, of a feeding device therefor, the expansible chamber connected with the feeding device for raising the same, the bulb connected with said chamber by an air-conveying connection, the hinged plate for compressing said bulb, and the lock for said plate, substantially as set forth.

This specification signed and witnessed the 11th day of December, 1889.

THOS. A. EDISON.

Witnesses:
D. H. DRISCOLL,
W. PELZER.